



Spatial Data Quality

Andy Alexis

Emission Inventory Workshop
Air Resources Board
November 14, 2001

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Why is Spatial Data Important?

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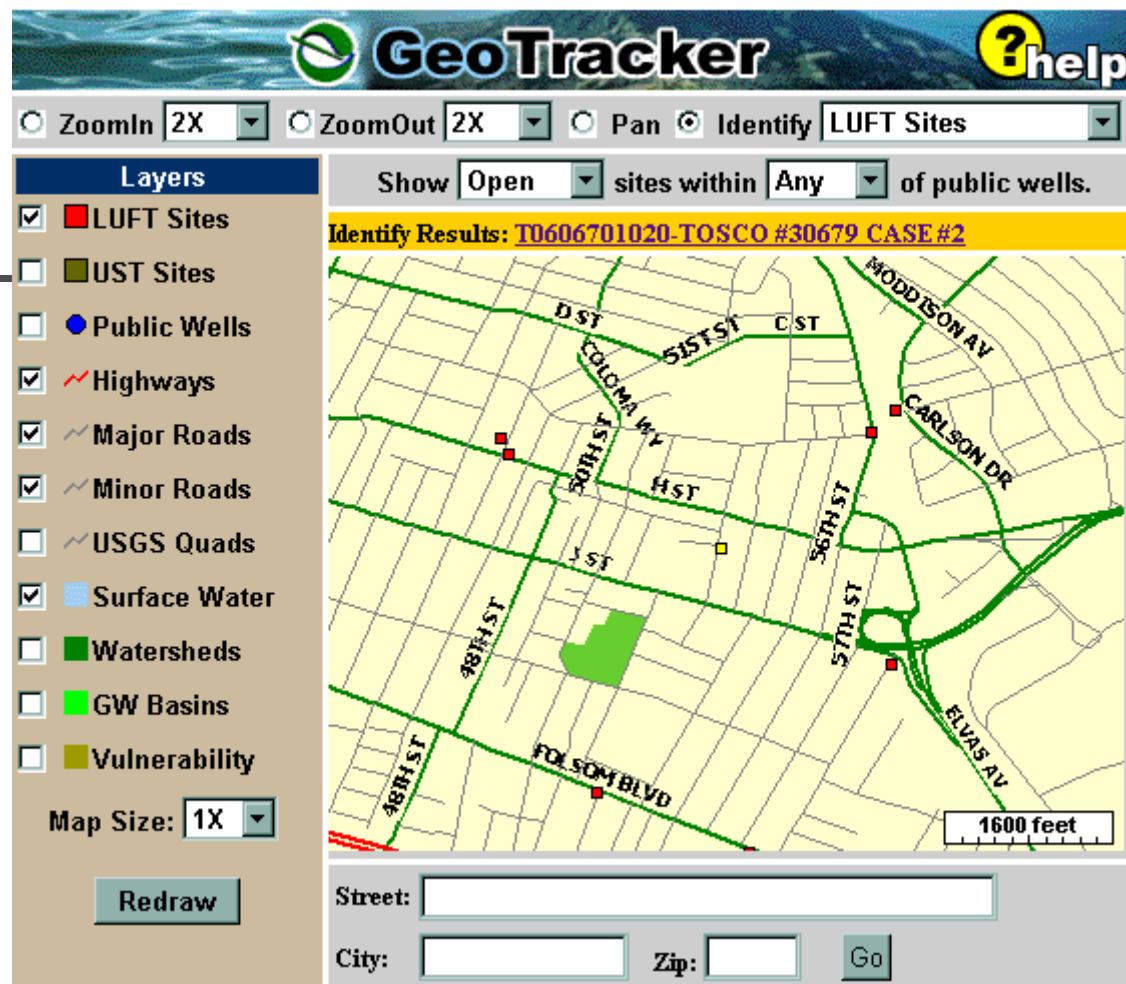


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Leaking Underground Fuel Tank Report
 TOSCO #30679 CASE #2 (SACRAMENTO)
 2390 FLORIN RD
 SACRAMENTO , CA 95801
 (Show this Site on Map)
 Regional Board - Case #: 341195
 CENTRAL VALLEY RWQCB (REGION 5) - (TTP)
 Local Agency (lead agency)
 SACRAMENTO ENVIRONMENTAL MANAGEMENT DEPT - (UNK)

★ 2390 florin road, Sacramento, CA 95822-4403

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[1]

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Driving Directions

- [To this location](#)
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Map New Location

----- [Sign In](#)

Address, Intersection or [Airport Code](#)

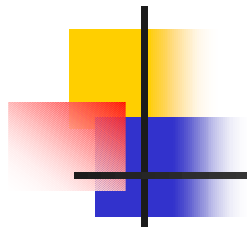
2390 florin road

City, State or Zip

Sacramento, CA 95822

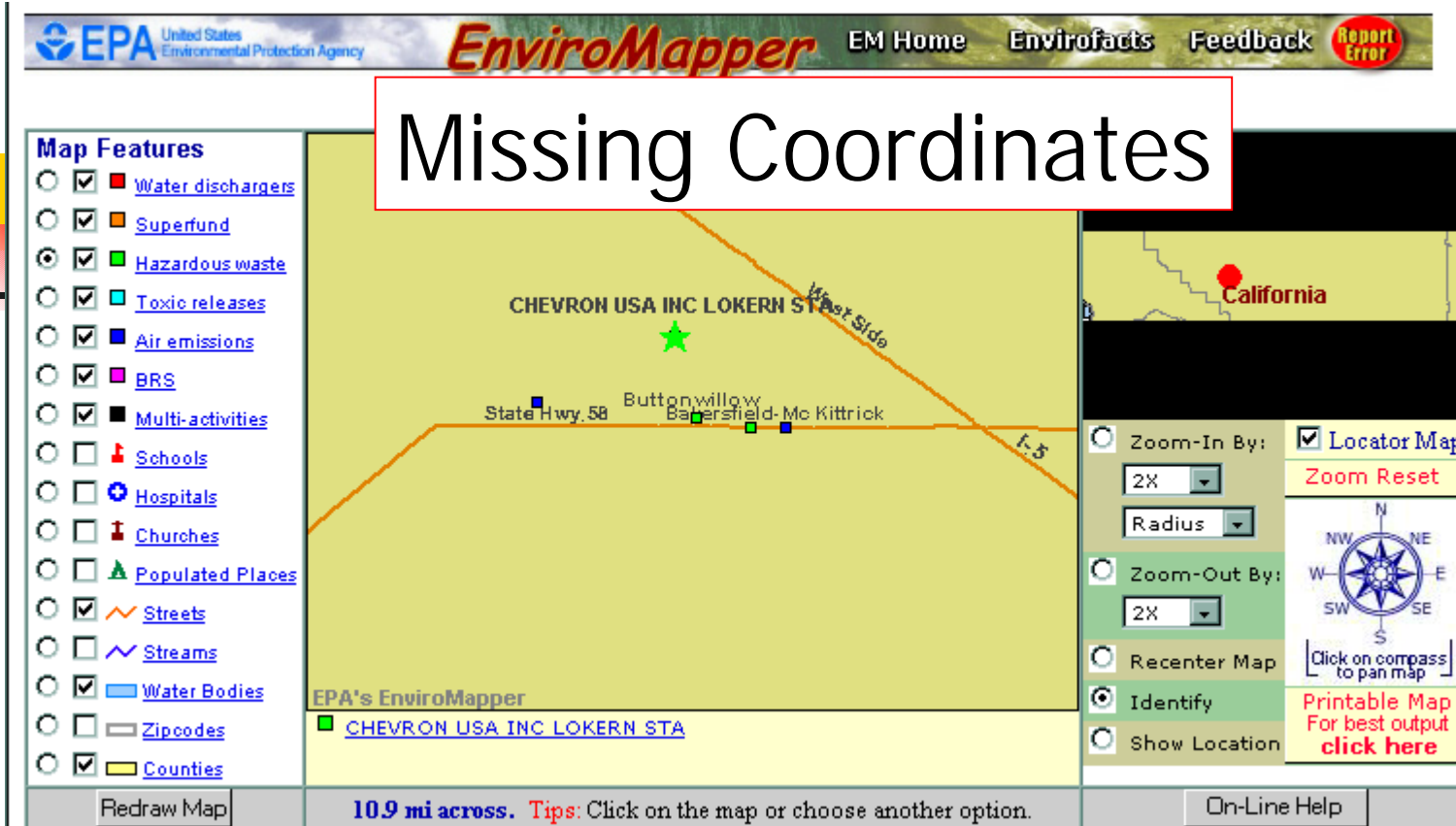
United States

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Current Spatial Data Quality

- Total 17,812 facilities, 1999 Inventory
- Missing Coordinates
 - 20% of UTM's Missing
 - 2% Out of Range (not in reported county)
- Rounding of Coordinates (where UTM reported)
 - 43% at 1000 meters
 - 31% at 100 meters
 - 19% at 10 meters
 - 6% at 1 meter
- Address Fields
 - 16% of Address can't be address matched
- Stacks
 - Some districts do not provide at all



CHEVRON USA INC LOKERN STA

EPA Facility ID: CAD000629055

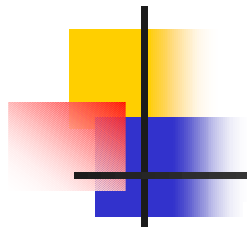
Latitude: 35.421911 Longitude: -119.474284

The latitude and longitude coordinates above come from the Envirofacts Locational Reference Tables (LRT). The method used to derive the Most Accurate Coordinates was **ZIP CODE-CENTROID**. These coordinates correspond to the OTHER location and represent the best location for the facility. The coordinates were obtained from CONTRACTOR.



Rounding Errors

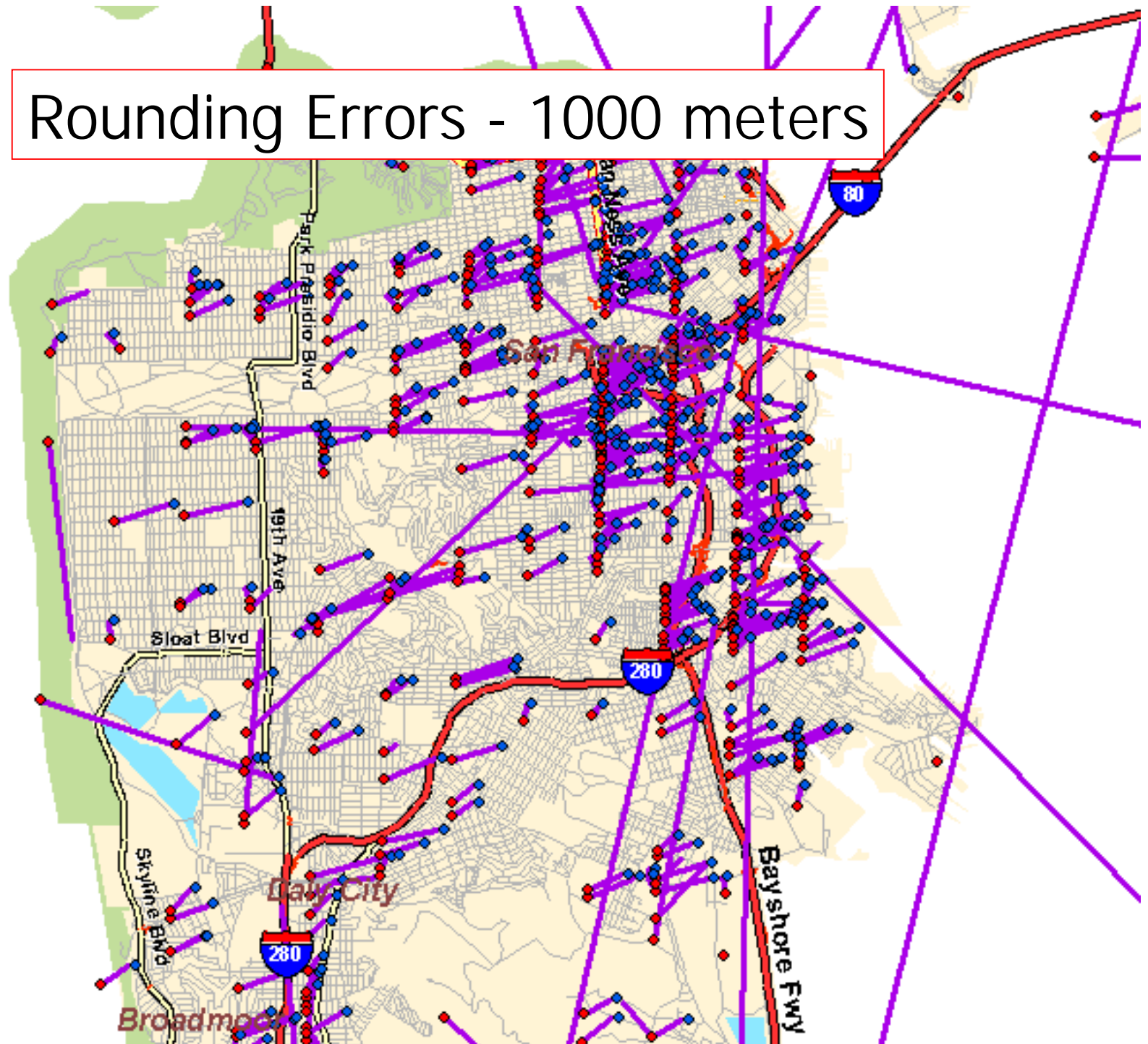
- CARB has UTMs in Kilometers, not meters
- UTM Easting (UE) - 6 digits
 - 1000 meters - 649.0
 - 100 meters - 649.1
 - 10 meters - 649.12
 - 1 meters - 649.123
- UTM Northing (UN) - 7 digits
- UTM Zone (UZ) 10 or 11



UTM Zones



Rounding Errors - 1000 meters





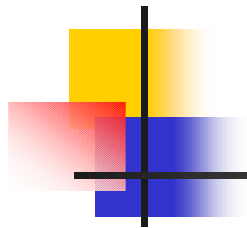
Address Fields

- **FSTREET**

- WASCO AIRPORT 1 MI NO OF WASCO
- WARREN GAS BOOSTER FACILITY
- WALSH & 1ST
- W/V;N/46
- W. EL DORADO/CR 98 - WELL #1

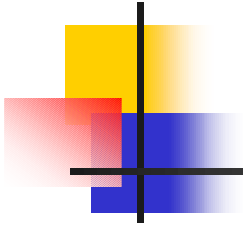
- Descriptive OK if no better way

- Business/Actual address



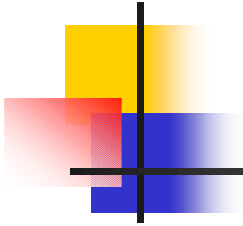
Sources for Locations

- GPS Receiver
- Address Matching
 - Arc GIS
 - <http://www.mapsonus.com> (options)
 - Microsoft Streets 98
- Assessor's Parcels
- Deeds (Section/Township)
- Topographic Maps



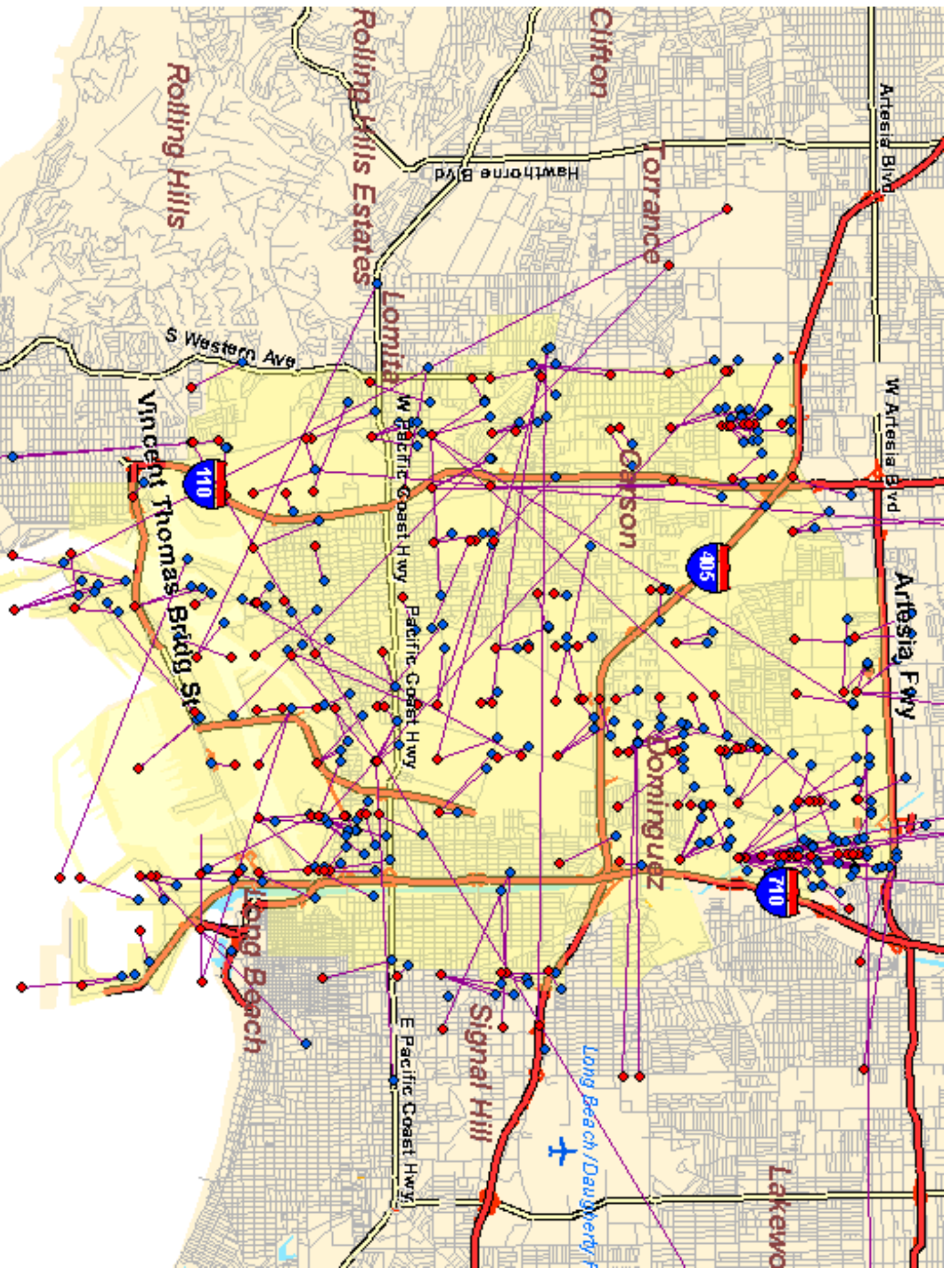
Current Project

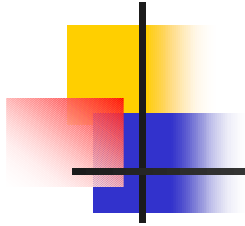
- Objective
 - Community Level Assessment of Spatial Data Quality
 - Assess Spatial Emissions
- Method
 - Compare Reported vs. Address Matched Location
 - Evaluate Emissions



Results

- Reported
 - Rounding Errors
 - Clusters
- Address-Matched
 - Facility Address vs. Mailing Address





Emissions Estimates

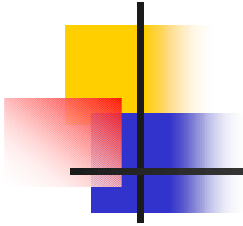
■ Underestimation of

- Xylenes (mixed)
- Methyl chloride {Chloromethane}
- Methylene chloride {Dichloromethane}
- Styrene
- Dipropylene glycol monomethyl ether
- Sodium hydroxide

■ Overestimation of

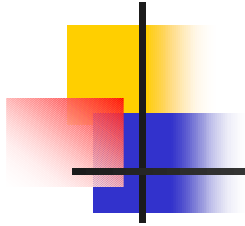
- Hydrochloric acid
- Toluene
- Methyl chloroform {1,1,1-TCA}
- Ammonia
- Fluorocarbons (chlorinated)

■ Community vs. Neighborhood



Recommendations

- Collect Wilmington Facility Locations using GPS Receivers
- Compare GPS Locations to Address Matched Location
 - Is Address Matching Sufficient to Accurately Locate a Facility?
- Publish Guidelines on Most Cost-Effective Means of Getting Facility Location
- Share Results with Districts



Resources

- Geotracker
 - <http://geotracker2.arsenaultlegg.com/>
- US EPA Enviromapper
 - <http://www.epa.gov/enviro>
 - <http://maps.epa.gov/enviromapper/>
- Maps on Us
 - <http://www.mapsonus.com>
 - Set general options
- CARB can convert lat/long to UTM